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125695	מספר: Number
07-08-1998	תאריך: Date
הוקדם/נדחה Ante/Post-dates	

חוק הפטנטים, התשכ"ז -- 1967
PATENTS LAW, 5727-1967

בקשה לפטנט

Application for Patent

C:31553

אני, (שם המבקש, מענו -- ולגבי גוף מאוגד -- מקום התאגדותו)

I (Name and address of applicant, and, in case of body corporate-place of incorporation)

TAMAR GILOH
19A Hahistadrut Street
Hod Hasharon

תמר גלה
רחוב ההסתדרות 19א
הוד השרון

(An Israeli citizen)

(אזרח ישראל)

שמה הוא Being the Inventor
Owner, by virtue of

בעל אמצאה מכח היותה הממציאה
of an invention, the title of which is:

בגדים תחתונים מגינים

(בעברית)
(Hebrew)

A PROTECTIVE UNDERGARMENT

(באנגלית)
(English)

hereby apply for a patent to be granted to me in respect thereof

מבקש בזאת כי ינתן לי עליה פטנט

* בקשה חלוקה - Application for Division		* בקשת פטנט מוסף - Application for Patent of Addition		* דרישה דין קדימה Priority Claim	
מבקשת פטנט from Application	מס. _____ dated _____ מיום	* לבקשה/לפטנט to Patent/Appl.	מס. _____ dated _____ מיום	מספר/סימן Number/Mark	תאריך Date
* יפוי כת: כללי/מיוחד - רצוף בזה / עוד יוגש P.O.A.: general / individual - attached / to be filed later - הוגש בענין _____ filed in case _____		המען למסירת הודעות ומסמכים בישראל Address for Service in Israel <u>Sanford T. Colb & Co.</u> <u>P.O.B. 2273</u> <u>Rehovot 76122</u>			
חתימת המבקש Signature of Applicant For the Applicant, <u>Sanford T. Colb & Co.</u> C:31553				שנת 1998 of the year	בחודש AUGUST of 6 יום Thi
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בגדים תחתונים מגינים

A PROTECTIVE UNDERGARMENT

TAMAR GILOH
C:31553

תמר גילה

31533ud2.gil HB-9807 06/08/98

FIELD OF THE INVENTION

The present invention relates to protective undergarments generally as well as to methods for manufacture thereof.

BACKGROUND OF THE INVENTION

Various types of protective undergarments are known in the patent literature. The following patents and patent applications and the references cited therein are believed to represent the state of the art: U.S. Patent 5,098,419; PCT Published Patent Application WO 96/36248 and European Patent 327,823.

SUMMARY OF THE INVENTION

The present invention seeks to provide a protective undergarment which is generally lighter and more comfortable than conventional protective undergarments and which can be manufactured in large quantities at relatively low cost.

There is thus provided in accordance with a preferred embodiment of the present invention a protective undergarment comprising:

- an integrally formed undergarment body formed of a liquid impermeable material; and

- an absorptive pad associated with the integrally formed undergarment body.

Preferably, the undergarment body includes:

- a first portion which is formed with multiple perforations to permit passage of perspiration therethrough; and

- a second portion which is substantially not perforated, so as to prevent passage of body fluids therethrough.

In accordance with a preferred embodiment of the present invention the absorptive pad is associated with the undergarment body at the second portion.

Preferably, the second portion extends beyond the absorptive pad.

There is additionally provided in accordance with a preferred embodiment of the present invention a protective undergarment comprising an integrally formed undergarment body formed of a liquid impermeable material, the undergarment body including:

- a first portion which is formed with multiple perfora-

tions to permit passage of perspiration therethrough; and

a second portion which is substantially not perforated, so as to prevent passage of body fluids therethrough.

Preferably, the liquid impermeable material is an elastomer.

Additionally, the liquid impermeable material is natural rubber.

In accordance with a preferred embodiment of the present invention, the undergarment body has a thickness of approximately 500 microns.

Preferably, the protective garment also comprises an absorbent pad fixed to the undergarment body.

The protective undergarment may be a brassiere, underpants or any other suitable garment.

The protective undergarment may have fibers adhered to at least one surface of the undergarment body.

In accordance with one embodiment of the present invention, the absorbent pad includes a portion extending downward from the crotch along the thigh.

There is additionally provided in accordance with a preferred embodiment of the present invention a method of manufacture of protective undergarments comprising the steps of:

forming an undergarment body of a liquid impermeable material; and

forming multiple perforations on a first portion of the undergarment body to permit passage of perspiration therethrough.

Preferably, the step of associating an absorbent pad

with a second portion of the undergarment body.

There is also provided in accordance with a preferred embodiment of the present invention a method of manufacture of protective undergarments comprising the steps of:

forming an undergarment body of a liquid impermeable material; and

fixedly associating an absorbent pad with the undergarment body.

Preferably, the associating step comprising forming the undergarment body over a portion of the pad.

Preferably, the method also includes the step of forming the undergarment body with an absorbent pad, so as to fix the pad to the undergarment body.

Additionally in accordance with a preferred embodiment of the present invention, the method includes the step of adhering cotton fibers to at least one surface of the undergarment body.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be understood and appreciated more fully from the following detailed description, taken in conjunction with the drawings in which:

Fig. 1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H and 1I are illustrations of a method for producing protective undergarments in accordance with a preferred embodiment of the present invention; and

Fig. 2 is a simplified illustration of protective undergarments produced generally by the method of Figs. 1A - 1F in accordance with a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

Reference is now made to Fig. 1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H and 1I are simplified illustrations of a method for producing protective undergarments in accordance with a preferred embodiment of the present invention. The invention is described hereinbelow with reference to Figs. 1A - 1I, with specific reference to underpants, it being appreciated that the invention applies equally to any other suitable undergarment.

As seen in Fig. 1A, a three dimensional garment form 10 is provided on which an array 12 of protrusions 14, such as needles, is formed in the general shape of underpants to be formed. The protrusions 14 are preferably covered with TEFLON R. The crotch area 16 of the underpants is preferably not formed with protrusions 14. The remainder of the form 10 is preferably coated with a non-adhesion substance, such as TEFLON R.

As shown in Fig. 1B, garment form 10 is preferably dipped in a liquid 17, such as latex, which when allowed to dry, forms a stretchable, light weight garment 18 over array 12 and crotch area 16. It may be appreciated that the provision of protrusions 14 causes the garment 18 to be perforated except at crotch area 16. Thus the garment 18 is "breathable" except at the crotch area 16, where it is liquid impermeable.

Following dipping of the garment form 10 into liquid 17, the garment 18 is rubbed with a mechanical device (not shown) in order to remove any superfluous elastomer material.

In accordance with a preferred embodiment of the present invention, as illustrated in Fig. 1C, an absorptive pad 20 is associated with the light weight garment 18 at the crotch

area 16. It may be associated by the use of an adhesive, but is preferably attached to the remainder of garment 18 by virtue of the fact that the liquid is allowed to dry on the form 10 in engagement with the absorptive pad 20.

Prior to removal of the garment 18 from the form 10, the exterior surface of the garment on the form 10, which will eventually be turned inside-out to form the interior surface, is preferably sprayed with adhesive 22, as shown in Fig. 1D and thereafter with cotton fibers 24 or any other suitable material such as cellulose fibers, as indicated in Fig. 1E, thereby to provide a comfortable and non-stick skin engaging surface. Preferably pad 20 is covered during the steps of Figs. 1D and 1E with a cover 26, which extends somewhat beyond the pad, so as to prevent liquid migration from the pad to the cotton fibers.

The resulting garment 30 may then be removed from the form 10, as seen in Fig. 1F and turned inside out. The outer surface of garment 30 may be coated or otherwise covered with cotton fiber or any other suitable material and finished in an appropriate manner.

The completed garment 40, as seen in Fig. 1G, is preferably extremely light weight, low cost, stretchable, underpants, which is perforated generally except at the crotch area and which is preferably integrally formed with an internal absorptive pad at the crotch area. The garment is preferably formed of the liquid impermeable materials such as elastomers, and natural rubber (for example latex) and has a thickness of approximately 500 microns. In accordance with a preferred embodiment of

the present invention, as seen in Fig. 1H, a tear region 42 may be incorporated in the garment, such as at a side thereof. This enables ease of removal of the garment, by tearing it at region 42. Once removed the torn, worn garment may be disposed of, as illustrated in Fig. 1I.

The final stage of manufacturing of the garment 18 includes a fast vulcanization process and edge-cutting of the garment, as is known in the art.

As can be seen from Fig. 2, the garment may be underpants 50, a brassiere 60, or any other suitable garment. It is noted that the pad 62 of the underpants 50 may have a portion which extends downwardly along the wearer's legs.

The resulting garment is a body-fitting garment, covered with fibers, which give the garment a comfortable and cosy feeling to the wearer.

It will be appreciated by persons skilled in the art that the present invention is not limited by what has been particularly shown and described hereinabove. Rather the scope of the present invention includes variations and modifications of the various features described in the specification and shown in the drawings which may occur to a person of ordinary skill in the art upon reading the foregoing description and which are not in the prior art.

C L A I M S

1. A protective undergarment comprising:
an integrally formed undergarment body formed of a liquid impermeable material; and
an absorptive pad associated with the integrally formed undergarment body.
2. A protective undergarment according to claim 1 and wherein said undergarment body includes:
a first portion which is formed with multiple perforations to permit passage of perspiration therethrough; and
a second portion which is substantially not perforated, so as to prevent passage of body fluids therethrough.
3. A protective undergarment according to claim 2 and wherein said absorptive pad is associated with said undergarment body at said second portion.
4. A protective undergarment according to claim 3 and wherein said second portion extends beyond said absorptive pad.
5. A protective undergarment comprising an integrally formed undergarment body formed of a liquid impermeable material, the undergarment body including:
a first portion which is formed with multiple perforations to permit passage of perspiration therethrough; and
a second portion which is substantially not perforated, so as to prevent passage of body fluids therethrough.

6. A protective undergarment according to any of claims 1 - 5 and wherein said liquid impermeable material is an elastomer.

7. A protective undergarment according to any of claims 1 - 5 and wherein said liquid impermeable material is natural rubber.

8. A protective undergarment according to any of the preceding claims and wherein said undergarment body has a thickness of approximately 500 microns.

9. A protective undergarment according to any of the preceding claims 5 - 8 and also comprising an absorbent pad fixed to the undergarment body.

10. A protective undergarment according to any of the preceding claims and wherein said undergarment body is a brassiere.

11. A protective undergarment according to any of the preceding claims and wherein said undergarment body is underpants.

12. A protective undergarment according to any of the preceding claims and also comprising fibers adhered to at least one surface of the undergarment body.

13. A protective undergarment according to any of claims 1

- 4 and 9 and wherein said absorbent pad includes a portion extending downward from the crotch along the thigh.

14. A method of manufacture of protective undergarments comprising the steps of:

forming an undergarment body of a liquid impermeable material; and

forming multiple perforations on a first portion of the undergarment body to permit passage of perspiration therethrough.

15. A method of manufacture according to claim 14 and including the step of associating an absorbent pad with a second portion of said undergarment body.

16. A method of manufacture of protective undergarments comprising the steps of:

forming an undergarment body of a liquid impermeable material; and

fixedly associating an absorbent pad with said undergarment body.

17. A method according to either of claims 15 and 16 and wherein said associating step comprising forming said undergarment body over a portion of said pad.

18. A method of manufacture of protective undergarments according to any of claims 15 - 17 and wherein said liquid im-

permeable material is an elastomer.

19. A method of manufacture of protective undergarments according to any of claims 15 - 17 and wherein said liquid impermeable material is natural rubber.

20. A method of manufacture of protective undergarments according to any of the preceding claims 14 - 19 and wherein said undergarment body has a thickness of approximately 500 microns.

21. A method of manufacture of protective undergarments according to claim 14 and also comprising the step of forming the undergarment body with an absorbent pad, so as to fix the pad to the undergarment body.

22. A method of manufacture of protective undergarments according to any of the preceding claims 14 - 21 and also comprising adhering cotton fibers to at least one surface of the undergarment body.

23. Apparatus according to any of claims 1 - 13 substantially as shown and described hereinabove.

24. Apparatus according to any of claims 1 - 13 substantially as illustrated in any of the drawings.

25. A method according to any of claims 14 - 23, substantially as shown and described hereinabove.

26. A method according to any of claims 14 - 23, substantially as illustrated in any of the drawings.

For the applicant,

Sanford T. Colb & Co.
Advocates & Patent Attorneys
C: 31533 HB-9807

FIG. 1A

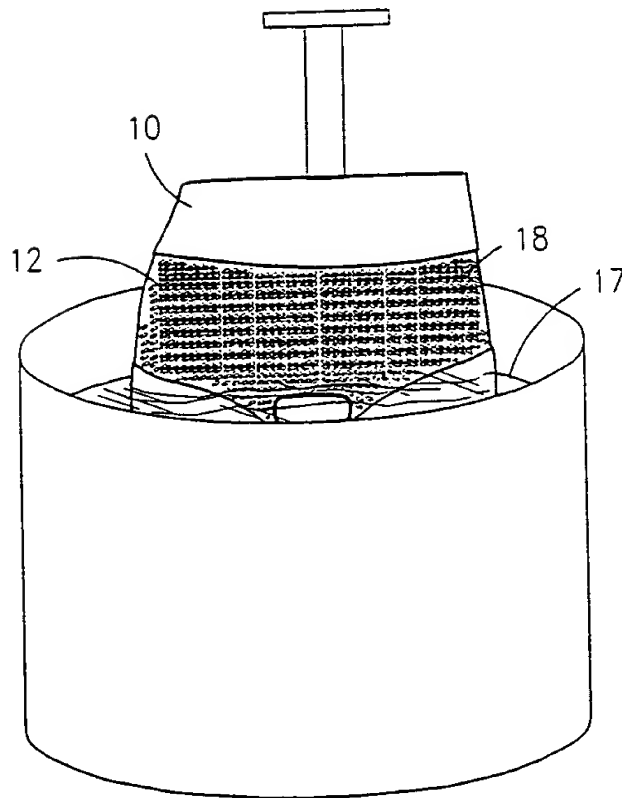
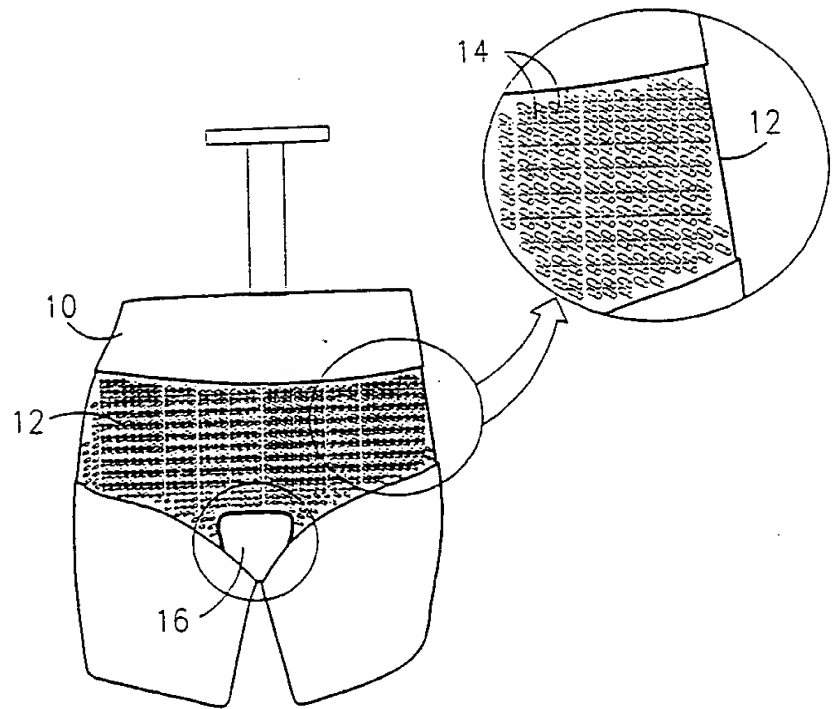


FIG. 1B

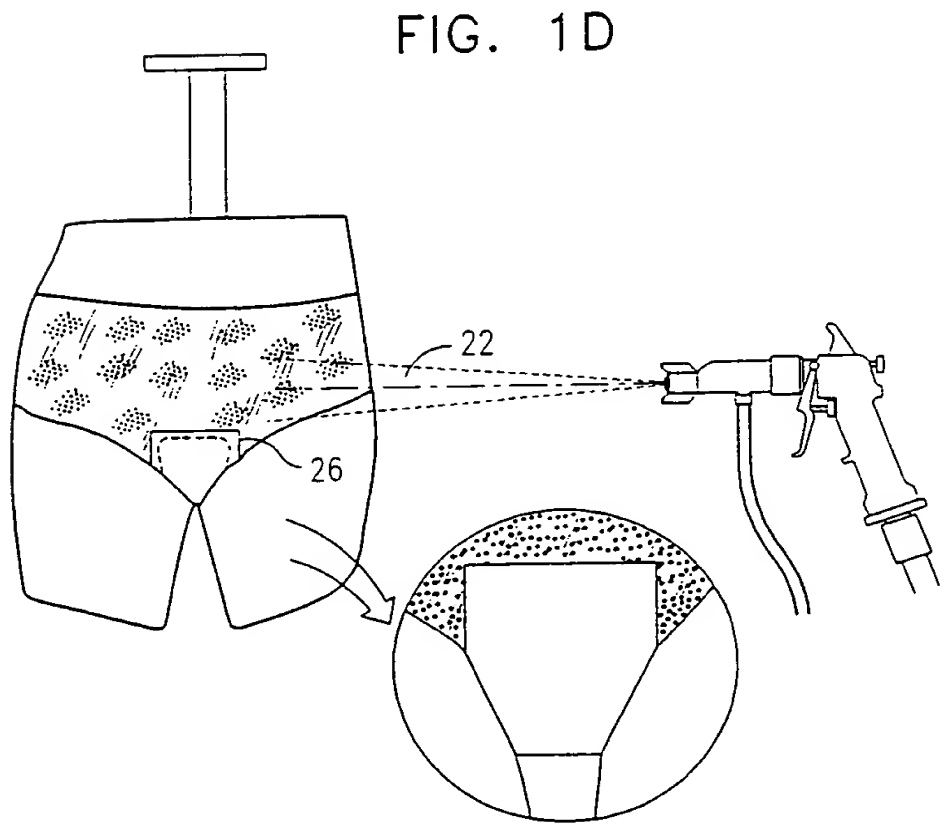
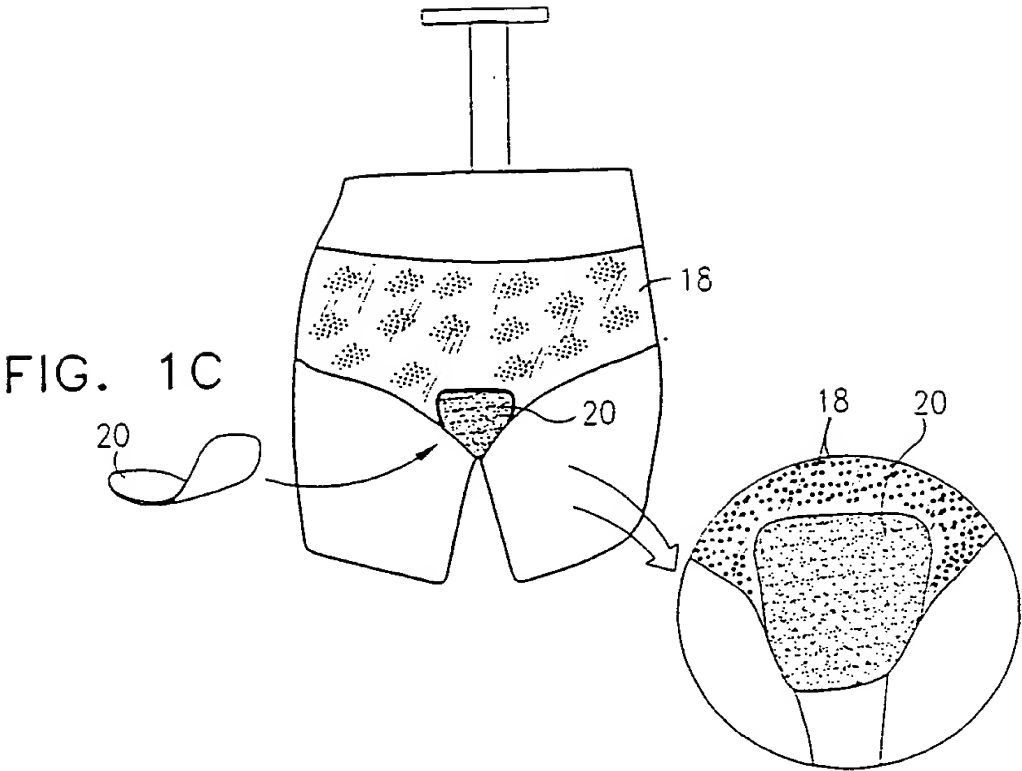


FIG. 1E

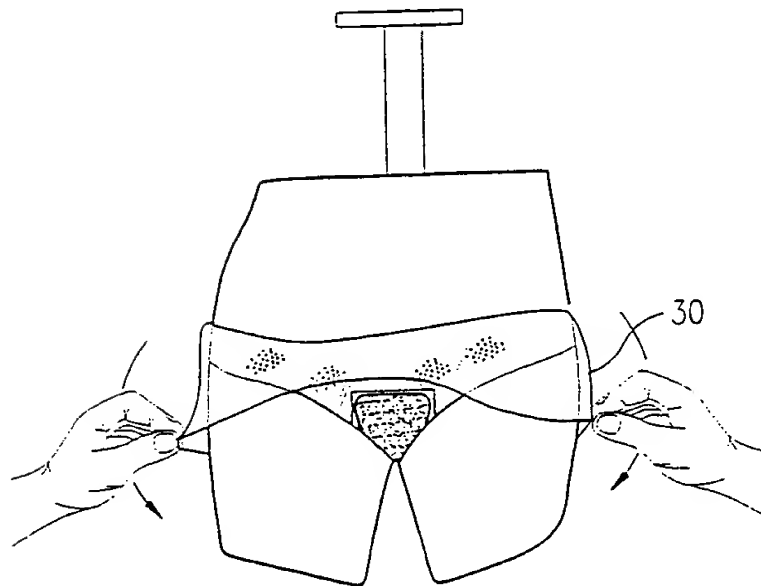
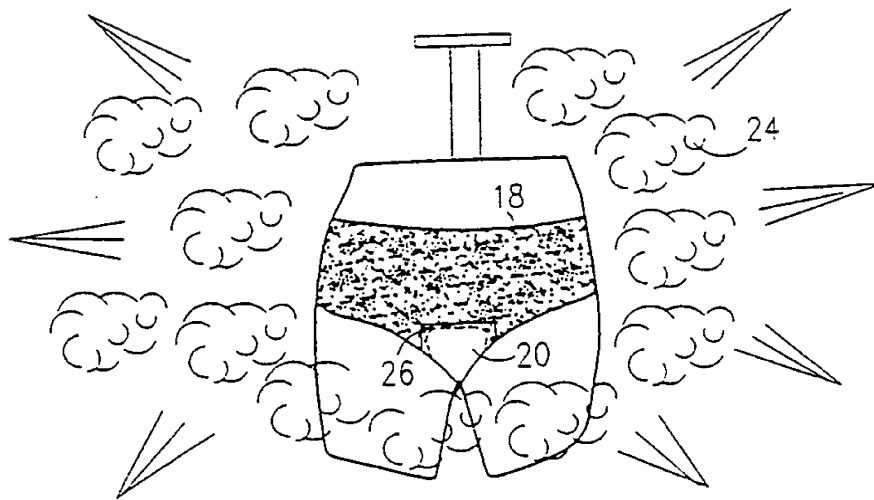


FIG. 1F

FIG. 1G

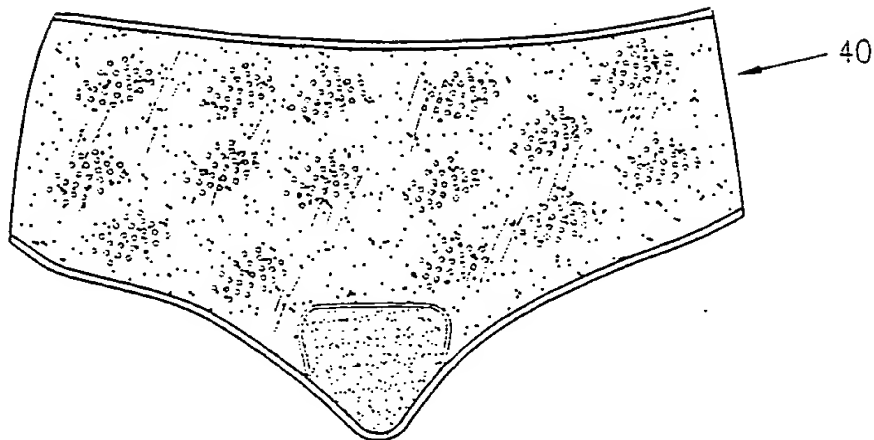


FIG. 1H

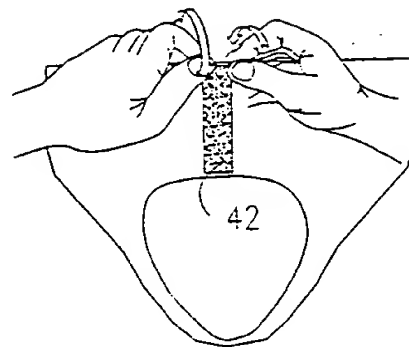


FIG. 1I

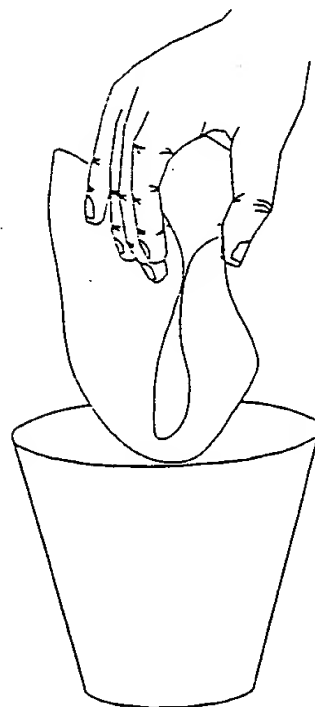
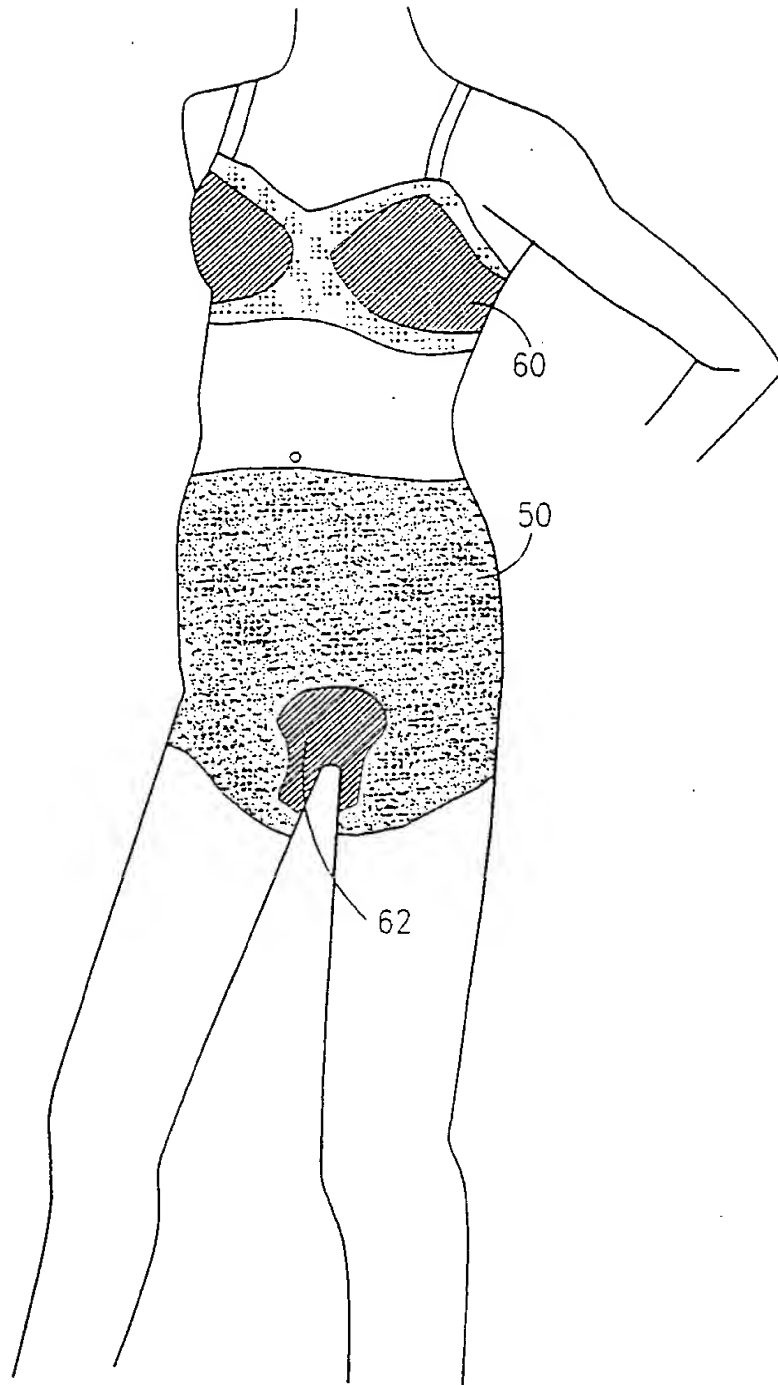


FIG. 2



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